

REMARKS:

The Office action mailed May 13, 2004 has been received and carefully considered. Reconsideration of the application as amended hereby is respectfully requested.

A new declaration was requested and such has been included.

Claims 8 and 12 were objected to and have been canceled.

The remaining Claims 1 to 7, 9 to 11 and 13 to 20 were rejected as anticipated or obvious in view of various combinations of Kuo, Jacques and Vidrine. The claims have been amended in a manner which is believed to distinguish from the cited art.

It is difficult to mold a partial spherical surface on the interior of metal, plastic or other piping because special molds must be designed that can collapse after the molding is complete to allow the "captured" mold to escape from the pipe. Such processes are expensive and can be labor intensive. An example of a device manufactured from such a process is shown in the cited Vidrine reference.

The Kuo device has mating spherical surfaces to function as a ball joint. Kuo has resolved the molding problem by splitting the outside pipe at the greatest diameter of the spherical surface and then joining the two pieces around the ball on the connecting piece. This greatly increases the complexity of the device because additional pipe elements, bolts, nuts, seals, etc.

must be made and a substantial amount of labor is required to assemble all of the parts in the field.

The inventor of the present application has cleverly overcome this problem and can use pipes with simple cylindrical shaped internal surfaces. This is accomplished by having a partial spherical surface on the connecting piece which does not directly engage the pipe. Rather, a flexible seal with a mating partial spherical surface is mounted over the partial spherical surface of the connecting piece. The seal is part of a housing that has a radially outer surface that is cylindrical and shaped to be easily mated with the inner cylindrical surface of the pipe simply by sliding the two together axially.

Applicant's structure is more specifically described in each of the independent original claims, as well as new Claim 21 which has been written to emphasize this structure. It is urged that the claimed structure is not taught by Kuo, Vidrine or the other art of record nor are its substantial advantages suggested in the art of record. If applicant's invention were obvious in view of the prior art, it is urged that applicant's concept would have been used as opposed to the structures taught by the prior art in order to reduce costs and labor time to make and assemble the devices.

In summary, it is urged that the pending claims distinguish over the art of record and notice to that effect is earnestly

Ronald G. Brown

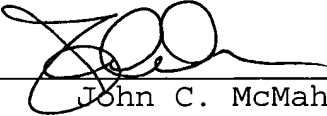
Serial No. 10/623,233

requested.

The Examiner is invited to contact the undersigned by telephone, if prosecution of this application can be expedited thereby.

Respectfully Submitted,

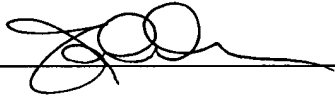
JCM:lm  
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:  
Commissioner For Patents,  
P.O. Box 1450,  
Alexandria, VA 22313-1450 on  
August 2, 2004.

Ronald G. Brown  
(Applicant)

By

  
\_\_\_\_\_  
August 2, 2004

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(Date of Signature)